



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Vladimir Fuflyigin et al. Art Unit : 2883
Serial No. : 10/720,606 Examiner : Eric K. Wong
Filed : November 24, 2003
Title : DIELECTRIC WAVEGUIDE AND METHOD OF MAKING THE SAME

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicants request consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request.

The following application is related to the present application in that it claims the benefit of, or priority to, one or more common applications:

1. U.S. Patent Application Serial No. 10/720,453, filed on November 24, 2003, now published as U.S. Publication No. US-2004/0137168 A1.

We invite the Examiner to review the prosecution file for this related application because they may disclose and claim similar subject matter. We presume that the Examiner has access to these files; however, we are happy to provide such files upon request.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit

June 1, 2006

Signature

M. Florcak

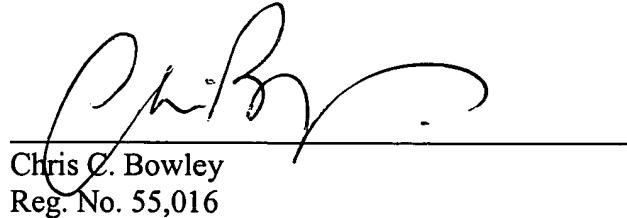
Mary K. Florcak

Typed or Printed Name of Person Signing Certificate

06/05/2006 CCHAU1 00000105 10720606
02 FC:1806 180.00 0P

This statement is being filed after a first Office action on the merits, but before receipt of a final Office action or a Notice of Allowance. A check for \$180 in payment of the late submission fee of §1.17(p) is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

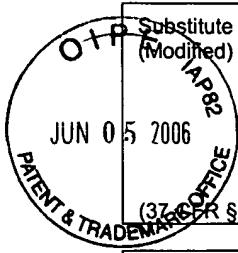


Chris C. Bowley
Reg. No. 55,016

Date: 6/1/2006

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

21345428.doc



Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin et al.	
		Filing Date November 24, 2003	Group Art Unit 2883

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	H1754	10/1998	Tran et al.			
	AB	3,850,604	11/1974	Klein			
	AC	3,938,974	02/1976	Macedo et al.			
	AD	4,324,803	04/1982	Bergmann, et al.			
	AE	4,339,173	07/1982	Aggarwal, et al.			
	AF	4,410,345	01/18/83	Usui et al.			
	AG	4,612,294	09/1986	Katsuyama, et al.			
	AH	4,728,350	03/1988	Cocito, Giuseppe			
	AI	4,730,896	03/1988	Katsuyama, et al.			
	AJ	4,733,940	03/1988	Broer et al.			
	AK	4,913,518	04/1990	Fine			
	AL	4,932,752	06/1990	Krashkevich, et al.			
	AM	5,015,844	05/1991	Cole			
	AN	5,483,614	01/1996	Bruck, et al.			
	AO	5,629,953	05/1997	Bishop, et al.			
	AP	5,641,956	06/1997	Vengsarkar, et al.			
	AQ	5,661,839	08/1997	Whitehead			
	AR	5,740,287	04/1998	Scalora, et al.			
	AS	5,802,236	09/1998	DiGiovanni et al.			
	AT	5,812,729	09/1998	Allison, et al.			
	AU	5,814,367	09/1998	Hubbard, et al.			
	AV	5,949,935	09/1999	Schaafsma, et al.			
	AW	5,991,486	11/1999	Braglia			
	AX	6,058,127	05/2000	Joannopoulos, et al.			
	AY	6,075,915	06/2000	Koops et al.			
	AZ	6,108,474	08/2000	Eggleton, et al.			
	AAA	6,115,526	09/2000	Morse			

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin et al.	
		Filing Date November 24, 2003	Group Art Unit 2883

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	ABB	6,128,429	10/3/2000	Cole et al.			
	ACC	6,130,780	10/10/2000	Joannopoulos et al.			
	ADD	6,175,671	01/2001	Roberts			
	AEE	6,195,483	02/2001	Moon, et al.			
	AFF	6,201,916	03/2001	Eggleton et al.			
	AGG	6,260,388	07/2001	Borrelli, et al.			
	AHH	6,301,421	10/2001	Wickham, et al.			
	AII	6,334,017	12/2001	West			
	AJJ	6,334,019	12/2001	Birks et al.			
	AKK	6,380,551	04/2002	Abe, et al.			
	ALL	6,389,197	05/2002	Iltchenko, et al.			
	AMM	6,404,966	06/2002	Kawanishi et al.			
	ANN	6,413,891	07/2002	Cho et al.			
	AOO	6,504,645	01/2003	Lenz et al.			
	APP	6,728,439	4/27/2004	Weisberg et al.			
	AQQ	6,788,864	9/7/2004	Ahmad et al.			
	ARR	6,801,698	10/5/2004	King et al.			
	ASS	6,816,243	11/9/2004	Shurgalin et al.			
	ATT	6,879,386	4/12/2005	Shurgalin et al.			
	AUU	6,895,154	5/17/2005	Johnson et al.			
	AVV	6,898,359	5/24/2005	Soljacic et al.			
	AWW	6,903,873	6/7/2005	Joannopoulos et al.			
	AXX	2001/0026667	10/2001	Kawanishi, et al.			
	AYY	2002/0039046	04/2002	Lipson, et al.			
	AZZ	2003/0044158	03/2003	King et al.			
	AAAA	2003/0044159	3/6/2003	Anderson et al.			
	ABBB	2004/0013379	1/22/2004	Johnson et al.			

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))				Applicant Vladimir Fuflyigin et al.	
				Filing Date November 24, 2003	Group Art Unit 2883

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	ACCC	2004/0137168	7/15/2004	Fuflyigin			
	ADDD	2004/0223715	11/11/2004	Benoit et al.			
	AEEE	2005/0226579	10/13/2005	Fink et al.			
	AFFF	2005/0259933	11/24/2005	Temelkuran et al.			
	AGGG	2005/0259934	11/24/2005	Temelkuran et al.			
	AHHH	2005/0259942	11/24/2005	Temelkuran et al.			
	AIII	2005/0259944	11/24/2005	Anderson et al.			
	AJJJ	2005/0271340	12/8/2005	Weisberg et al.			

Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation
							Yes No
	AKKK	2,288,469	10/1995	Great Britain			
	ALLL	0 195 630	09/1986	Europe			
	AMMM	0 426 203	05/1991	Europe			
	ANNN	2000-035521	02/2000	Japan			
	AOOO	2001-051244	02/2001	Japan			
	APPP	WO 94/09393	04/1994	WIPO			
	AQQQ	WO 94/16345	07/1994	WIPO			
	ARRR	WO 97/01774	01/1997	WIPO			
	ASSS	WO 00/22466	04/2000	WIPO			
	ATTT	WO 00/46287	08/2000	WIPO			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	AUUU	A. Asseh, et al., "10cm Yb ³⁺ DFB fibre laser with permanent phase shifted grating", Electron. Lett., 31 (12): 969 (1995).
	AVVV	A. S. Oliveira et al., "Frequency upconversion in Er ³⁺ /Yb ³⁺ -codoped chalcogenide glass," Appl. Phys. Lett, 72 (7): 753-755 (1998).
	AWWW	A. T. Clausen et al., "10-GHz return-to-zero pulse source tunable in wavelength with the single- or multiwavelength output based on four-wave mixing in a newly developed highly nonlinear fiber," IEEE Photon. Technol. Lett., 13 (1): 70-72 (2001).
	AXXX	Andrea Melloni et al., "All-optical switching in phase-shifted fiber Bragg grating," IEEE Photonics Technology Letters, 12 (1): 42-44, January 2000.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin et al.		
		Filing Date November 24, 2003	Group Art Unit 2883	

AYYY	B. E. Little et al., "Microring resonator arrays for VLSI photonics", IEEE Photon. Technol. Lett., 12 (3): 323-325 (2000).
AZZZ	Berger V. "From photonic band gaps to refractive index engineering." Optical Materials, 11:2-3, Jan. 1999, pp. 131-142.
AAAAA	B. J. Eggleton et al., "All-optical switching in long-period fiber gratings," Optics Letters, 22 (12): 883-885, June 15, 1997.
ABBBB	B. J. Eggleton et al., "Grating resonance in air-silica microstructured optical fibers", Opt. Lett., 24 (21): 1460 (1999).
ACCCC	B. Malo, et al., "Photosensitivity in phosphorous-doped silica glass and optical waveguides," Appl. Phys. Lett 65 (4): 394 (1994).
ADDDD	Chang et al. "Vector Normal Modes on Two-Core Optical Fibers – Part I: The Normalmode solutions." Journal of Lightwave Technology, 15:7, Jul. 1997, pp. 1213-1223.
AEEEE	D. Furniss et al., "A novel approach for drawing optical fibers from disparate core/clad. glasses," J Non-Cryst. Sol. 213-214: 141-146 (1997).
AFFFF	E. Anderson et al., "Dielectric Materials for Manufacturing Photonic Bandgap Waveguide," US Patent Disclosure, (2001).
AGGGG	E. Brinkmeyer, et al., "Fibre Bragg reflector for mode selection and line-narrowing of injection lasers", Electron. Lett., 22 (3): 134 (1986).
AHHHH	Feigel A. et al. "Chalcogenide glass-based three-dimensional photonic crystals." Applied Physics Letters, 77:20, pp. 3221-3223, November 13, 2000.
AIIII	Fink et al. "Guiding optical Light in Air Using an All-Dielectric Structure;" Journal of Lightwave Technology, Vol. 17, no. 11, November 1999
AJJJJ	G. Meltz, et al., "Formation of Bragg gratings in optical fibers by a transverse holographic method", Opt.Lett., 14 (15): 823 (1989).
AKKKK	G. S. He et al., "Efficient amplification of a broad-band optical signal through stimulated Kerr scattering in a CS2 liquid-core fiber system," IEEE J. Quantum Electron., 28 (1): 323-329 (1992).
ALLLL	H.A. Haus, et al., "Antisymmetric taper of distributed feedback lasers", IEEE J. Quantum Electron., QE-12 (9): 532 (1976).
AMMMM	I. Gannot, et al., "Current Status of Fexible Waveguides for IR Laser Radiation Transmission", IEEE J. Sel. Topics in Quantum Electr., IEEE Service Center, 2 (4): 880-888 (Dec 1996).
ANNNN	J. Fick et al., "High photoluminescence in erbium-doped chalcogenide thin films," J. Non-cyrstalline Solids, 272 (2-3): 200-208 (2000).
AOOOO	J. Kobelke et al., "Chalcogenide glass single mode fibers--preparation and properties," J. Non-Cyrstalline Solids, 256-7: 226-231 (1999).
APPPP	J. M. Harbold et al., "Highly nonlinear As-S-Se glasses for all-optical switching," Optics Lett., 27 (2): 119-121 (2002).
AQQQQ	J. Marchionda et al., "Advanced rod in tube techniques for fluoride fiber fabrication," Ceramics Transactions, Solid-State Optical Materials, eds. Allan J. Bruce and B.V. HIREMATH, 28: 587-596 (1992).
ARRRR	Johnson et al., "Low-loss asymptotically single-mode propagation in large-core OmniGuide fibers," OPTICS EXPRESS, Vol. 9, No. 13, pages 748-779, December 17, 2001.
ASSSS	J. S. Foresi et al., "Photonic-bandgap microcavities in optical waveguides," Nature, 390: 143-145 (November 13, 1997).
ATTTT	Jia Jiang et al., "Fluorophosphate cladding glasses for fluoride glass fibers," J Non-Cryst. Sol., 213 and 214: 11-15 (1997).
AUUUU	J-X Cai, et al., "Simultaneous tunable dispersion compensation of many WDM channels using a sampled nonlinearly chirped fiber Bragg grating", IEEE Photon. Tech. Lett., 11 (11): 1455 (1999).

Examiner Signature

Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin et al.	
		Filing Date November 24, 2003	Group Art Unit 2883

AVVVV	K. O. Hill, et al., "Photosensitivity in optical fiber waveguides: Application to reflection filter fabrication", <i>Appl. Phys. Lett.</i> , 32 (10): 647 (1978).
AWWWW	K. O. Hill, et al., "Efficient mode conversion in telecommunication fibre using externally written gratings", <i>Electron. Lett.</i> , 26 (16): 1270 (1990).
AYYYY	L. F. Stokes, et al., "All-single-mode fiber resonator", <i>Opt. Lett.</i> , 7 (6): 288 (1982).
AZZZZ	Louis Poirier et al., "Nonlinear coaxial photonic crystal," <i>Applied Physics Letters</i> , 78 (18): 2626-2628, April 30, 2001.
AAAAAA	Massadegh R. et al. "Fabrication of single-mode chalcogenide optial fiber." <i>Journal of Lightwave Technology</i> , 16:2, pp. 214-216, February 1998.
ABBBBB	M. Ibanescu et al., "An all dielectric coaxial waveguide," <i>Science</i> , 289: 415-419 (2000).
ACCCCC	M. Miyagi, et al., "Fabrication of germanium-coated nickel hollow waveguides for infrared transmission", <i>Appl. Phys. Lett.</i> , 43 (5): 430 (1983).
ADDDDD	Monro, T.M. et al. "Chalcogenide Holey Fibres." <i>Electronics Letters</i> , 36:24, pp. 1998-2000, November 23, 2000.
AEEEEEE	M. Skorobogatiy et al., <i>Optics Express</i> , 10, p. 1227 (2002)
AFFFFF	M.W. Moore et al., "Sputtering of Chalcogenide Coatings on to Fluoride Glass," <i>Novel Glasses and Processes</i> , pp 193-197.
AGGGGG	N. Croitoru, et al., "Characterization of hollow fibers for the transmission of infrared radiation", <i>Appl. Opt.</i> , 29 (12): 1805 (1990).
AHHHHH	Nishii, J. et al. "Chalcogenide glass fiber with a core-cladding structure." <i>Applied Optics</i> , 28: 23, pp. 5122-5127, December 1, 1989.
AIIIII	Piere R. Villeneuve et al., "Single-mode waveguide microcavity for fast optical switching," <i>Opt. Lett.</i> , 21 (24): 2017-2019, December 15, 1996.
AJJJJJ	P. Yeh et al., <i>J. Opt. Soc. Am.</i> , 68, p. 1196 (1978)
AKKKKK	R. E. Smith et al., "Reduced coupling loss using a tapered-rib adiabatic-following fiber coupler," <i>IEEE Photon. Technol. Lett.</i> , 8 (8): 1052-1054 (1996).
ALLLLL	R.F. Cregan et al., <i>Science</i> 285, p. 1537-1539, (1999)
AMMMMM	R. Nubling and J. Harrington "Hollow-waveguide delivery systems for high-power, industrial CO ₂ lasers," <i>Applied Optics</i> , 34, No. 3, pp. 372-380 (1996)
ANNNNN	R. U. Ahmad et al., "Ultracompact corner-mirror and T-branches in silicon-on-insulator," <i>IEEE Photon. Technol. Lett.</i> , 14 (1): 65-76 (January 2002).
AOOOOO	Sanghera, J.S. et al. "Development and infrared applications of chalcogenide class optial fibers." <i>Fiber and Integrated Optics</i> , 19:3, pp. 251-274, March 1, 2000.
APPPPP	Sanghera, J.S. et al. "Fabricationof long lengths of low-loss IR transmitting AS40S (60-X) sex glass fibers." <i>Journal of Lightwave Technology</i> , 14:5, pp. 743-748, May 1, 1996.
AQQQQQ	S. Coen et al., "White-light supercontinuum generation with 60-ps pump pulses in a photonic crystal fiber," <i>Opt. Lett.</i> , 26 (17): 1356-1358 (2001).
ARRRRR	S. Ramachandran and S. G. Bishop, "Low loss photoinduced waveguides in rapid thermally annealed films of chalcogenide glasses," <i>Appl. Phys. Lett.</i> , 74 (1): 13-15 (1999).
ASSSSS	Stojan Radic et al., "Theory of low-threshold optical switching in nonlinear phase-shifted periodic structures," <i>J.Opt.Soc.Am. B</i> , 12 (4): 671-680, April 1995.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-022001	Application No. 10/720,606
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin et al.	
		Filing Date November 24, 2003	Group Art Unit 2883

ATTTTT	T. Cardinal et al., "Non-linear optical properties of chalcogenide glasses in the system As-S-Se," J. Non-Crystalline Solids, 256-7: 353-360 (1999).
AUUUUU	T.A. Birks et al., "Dispersion Compensation Using Single-Material Fibers," IEEE Photonics Technology Letters, 11 (6): 674-676 (1999).
AVVVVV	Y. Fink et al., "Block copolymers as photonic band gap materials," J. Lightwave Tech., 17 (11): 1963-1969, (JLT IEEE-special issue on photonic crystals-invited paper) (1999).
AWWWWW	Y. Matsuura, et al., "Hollow glass waveguides with three layered dielectric coating fabricated by chemical vapor deposition," J. Opt. Soc. Amer., 14 (6): 1255 (1997).
AXXXXX	Y. Matsuura, et al., "Optical properties of small-bore hollow glass waveguides", J. Opt. Soc. Amer., 34 (30): 6842-6847 (1995)
AYYYYY	Y. Yamamoto et al., Phys. Today, 46: 66-73 (1993).
AZZZZZ	Yoel Fink et al., "A dielectric omnidirectional reflector," Science, 282: 1679-1682 (1998).
AAAAAAA	Yong Xu et al., "Asymptotic Analysis of Bragg Fiber," Optics Letters, 25 (24): 1756-1758 (2000).

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	